

**STATE OF HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
Honolulu, Hawai'i
August 28, 2009**

Acceptance Date: May 26, 2009
180-Day Expiration Date: November 22, 2009

**Board of Land and
Natural Resources
State of Hawai'i
Honolulu, Hawai'i**

REGARDING: Conservation District Use Application (CDUA) MA-3515 for Habitat Restoration and Fencing at Nu'u Pond

APPLICANT: Maui Coastal Land Trust

LANDOWNER: Kaupō Ranch, Ltd.

LOCATION: Kaupō, Maui

TMK: (2) 1-8-001:001 (portion)

AREA/PARCEL: 78 acres

AREA/USE: approx. 6 acres/1,191 linear feet (fence)

SUBZONE: General Subzone

DESCRIPTION OF AREA/CURRENT USE:

The proposed project site is located at Nu'u Pond in a rural area at Kaupō, Maui, TMK: (2) 1-8-001:001 (portion) (**Exhibits 1, 2, and 3**). The property is currently owned by the Kaupō Ranch, Ltd., and lies within the General subzone of the Conservation District (**Exhibit 4**). The applicant intends to purchase the property from Kaupō Ranch, Ltd.

The Nu'u Pond is among the healthiest coastal palustrine discharge wetlands in the State. Numerous avifauna species utilize Nu'u Pond. Endangered species include: Hawaiian stilt (Ae'o), Hawaiian Duck (Koloa), Hawaiian coot ('Alae ke'oke'o), and Hawaiian goose (Nēnē). Migratory birds include: Wandering tattler (Ulili), Ruddy turnstone, Northern shoveler (Koloa moha), Northern pintail (Koloa mapu), American wigeon, Blue-winged teal, Green-winged teal, Eurasian wigeon, Lesser scaup, Bristle-thighed curlew, Sanderling, and Pacific golden plover. The indigenous Black-crowned night heron and Short-eared owl can also be found at Nu'u Pond.

The Nu‘u Pond area also contains significant wetland plant species, including: ‘Akulikuli (*Sesuvium portulacastrum*), Kaluha (*Bolboschoenus maritimus*), Makaloa (*Cyperus laevigatus*), and ‘Ae‘ae (*Bacopa monnieri*). Other vegetation around the pond includes non-native Kiawe (*Prosopis pallida*) and Christmas berry (*Schinus terebinthifolia*).

In 1999, under a Partnership for Conservation grant, the Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) constructed an ungulate-proof fence around the pond in order to prevent ungulates from denuding the areas of its indigenous vegetation and degrading the site (**Exhibit 5**). The original fence has become increasingly damaged and no longer prevents ungulate incursions to the pond. Recent monitoring of Nu‘u Pond has revealed extensive ecological damage to the site, including pig wallows, rooting, and previously unidentified invasive species in the pond, attributable to ungulates.

PROPOSED USE:

The applicant intends to finalize purchasing the Nu‘u Pond area by August 2009 in order to conduct habitat restoration work for the numerous endangered Hawaiian waterbird species found there. As part of the Federal stimulus package funds distributed through the U.S. Fish and Wildlife Service, the applicant has received \$75,000 towards the subject project.

The project will involve repairing the fence and removing and controlling invasive tree species, which are currently damaging/threatening the fence (**Exhibit 7**). The project will follow the exact course of the existing fence and will only make a one-to-one replacement of the existing fence components (**Exhibit 6**). Repair of the fence is expected to substantially improve the ecological integrity of the site and improve the quality of the habitat. The applicant estimates the need to remove approximately 60 invasive trees; Kiawe (*Prosopis pallida*) and Christmas berry (*Schinus terebinthifolius*). These trees range in size from six inches to two feet (**Exhibit 8**).

Ecological restoration work will consist of both direct work in the field and monitoring of ecosystem indicators to determine the effectiveness of various restoration strategies. Restoration techniques include: repair of the existing ungulate proof fence; removal of invasive plant species, primarily Kiawe and Christmas berry; predator control, primarily of cats, mongoose, rates, and cattle egret; removal of ungulates, such as pigs, deer, and goats; planting of appropriate indigenous plants, such as Loulu (*Pritchardia spp.*), Naio (*Myoporum sandwicensis*), and Hala (*Pandanus tectorius*) surrounding the wetlands, and Kaluha (*Bolboschoenus maritimus*) and Makaloa (*Cyperus laevigatus*) in the wetlands; and creation of appropriate structures and features to facilitate successful waterbird breeding (e.g. nesting islands).

Of all these restoration activities, repairing the fence is the most important and most urgent. Monitoring photos taken prior to the 1999 construction of the fence indicated extensive damage to the wetlands, primarily by feral pigs. After the fence was installed, indigenous vegetation rebounded dramatically, with the majority of the pond now covered with extensive areas of Kaluha and Makaloa. However, since 2006, monitoring of the pond has indicated the fence is in need of repair as feral pigs now regularly access the pond, as indicated by deep wallows visible in numerous areas.

As part of their Management Plan (**Exhibit 9**), the applicant will make regular fence maintenance inspections at intervals no greater than every two weeks. Fence inspection visits will look for any indication of disturbance to the structural integrity of the fence, while also looking for any indication of the presence of ungulates within the confines of the Nu‘u Pond.

While short-term goals of the Nu‘u Pond habitat restoration project include repairing the functional integrity of the ungulate proof fence and controlling predators in the pond area, the long-term goals of the project include removing invasive plants and restoring indigenous vegetation.

SUMMARY OF COMMENTS:

CDUA MA-3515 was referred to the following agencies for review and comment: DLNR – Division of Forestry and Wildlife (DOFAW), Historic Preservation Division (SHPD), Maui District Land Office; County of Maui Planning Department; Office of Hawaiian Affairs (OHA); Office of Environmental Quality Control (OEQC); Department of Health (DOH); U.S. Fish and Wildlife Service; and Hāna Public Library. The following comments were received:

DLNR – Maui District Land Office

No comments.

DLNR – DOFAW

No comments. DOFAW supports this project.

DLNR – SHPD

The pond is part of the Nu‘u/Wai‘u Archaeological Complex, State Inventory of Historic Places (SIHP) #50-50-17-531, an extensive village and ceremonial area around Nu‘u Landing. Over 270 features are present within this complex, including habitation platforms, enclosures, canoe hale, burials, petroglyphs and pictographs, agricultural terraces, and large community enclosures. Nu‘u fishpond is located in the Nu‘u cluster of this complex; it is fed by a natural spring, and is an inland pond separated from the ocean by a natural sand/cobble barrier.

An archaeological field inspection of the area where the existing fence is situated was previously conducted by SHPD staff on June 2, 1996, at which time several of the above-noted archaeological features were found around the pond. The northern (mauka) shoreline of the pond contained extensive modifications, in addition to the stone wall which forms the pond perimeter. The modifications were located between the pond and an abrupt lava shelf which occurs around a portion of the pond area. To the east of the lava shelf, an area of terracing and paving is observed, which continued uphill some 30 meters from the pond. This terracing continued east into the hau thicket that is present in the eastern portion of the pond. Minor modifications were also observed along the proposed fence line as it circled the west and south perimeters of the pond.

During the inspection, an alternate fenceline which avoided the identified archaeological features was flagged. It is SHPD’s understanding that the alternate fence perimeter identified in June 1996 is the same route as the existing fence that was constructed in 1999. If this is correct, SHPD believes the proposed project will continue to have a “beneficial effect” to the historic

integrity of the fishpond, as it will protect associated features from further erosion that is caused by ungulate traffic. SHPD does ask, however, that careful attention by the applicant and field crew is paid to the method and extent of invasive plant removal so that there is no disturbance to any culturally significant subsurface deposits which may be located within the project's area of potential effect.

Applicant's response: The applicant will follow the same course of the 1999 fencing project, which follows the path of the 1996 archaeological survey that was designated to avoid any adverse impact on historic or cultural features. The field crew will be informed of the sensitive nature of this site, and will be appropriately trained to avoid damage to cultural and historical sites when removing invasive species surrounding Nu'u Pond.

OHA

OHA is supportive of this project.

Maui Planning Department

The Maui Planning Department provided the following comments: 1) That a conservation easement grant perpetual access to the land, under the control of the Department of Parks and Recreation; and 2) That all development shall be prohibited in perpetuity for the entire 100% of the land area comprising the conservation easement.

Applicant's response: The applicant will donate a conservation easement to the County of Maui. The easement will: 1) Guarantee public access while taking into account the need to protect endangered species, preserve the integrity of the numerous archaeological sites and ensure public safety; and 2) Prevent any type of future development on the entire 78 acres of the Nu'u Refuge.

ANALYSIS:

Following review and acceptance for processing, the applicant was notified, by letter dated May 22, 2009 that:

1. The proposed use is an identified land use within the General subzone of the Conservation District, according to Chapter 13-5, Hawai'i Administrative Rules (HAR) §13-5-22, P-7, SANCTUARIES (D-1) *Plant and wildlife sanctuaries, natural area reserves and wilderness and scenic areas, including habitat improvements under an approved management plan*;
2. Pursuant to §13-5-40(4), HAR, HEARINGS, a public hearing will not be required; and
3. In conformance with Chapter 343, Hawai'i Revised Statutes (HRS), as amended, and HAR, Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules, Subchapter 5, §11-200-8 (a)(2), the proposed use is exempt.

CDUA MA-3515 was published in OEQC's *Environmental Notice* on June 8, 2009.

The Maui Planning Department approved a Special Management Area (SMA) Exemption (Permit No. SM5 2009/0160) on June 1, 2009.

CONSERVATION CRITERIA:

HAR Section 13-5-30 provides eight specific criteria that the Department or Board shall apply to proposed land uses within the Conservation District. Land uses must conform to the following criteria:

1. *The proposed land use is consistent with the purpose of the conservation district.*

The purpose of the Conservation District is to conserve, protect, and preserve the important natural resources of the State through appropriate management and use to promote long-term sustainability and the public health, safety, and welfare.

The project will help to ensure the maintenance of high quality wetlands habitat, and by extension the breeding success of three endangered species (Hawaiian stilt, Hawaiian coot, and Hawaiian goose) currently found on the property.

Staff notes that the project is consistent with the purpose of the Conservation District.

2. *The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur.*

The property lies within the General subzone. The objective of the General subzone is to designate open space where specific conservation uses may not be defined, but where urban use would be premature.

Repairing the fence will help to ensure the perpetuation of high quality habitat on the site by preventing further degradation of Nu'u Pond.

Staff notes that the proposed use is consistent with the purpose of the objectives of the subzone, and is an identified land use within the General subzone of the Conservation District, according to Chapter 13-5, HAR §13-5-22, P-7, SANCTUARIES (D-1).

3. *The proposed land use complies with the provisions and guidelines contained in chapter 205A, HRS, entitled "Coastal Zone Management," where applicable.*

The project involves habitat restoration for indigenous wildlife in the area. Staff notes the project complies with CZM objectives as identified in Chapter 205A, HRS.

4. *The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.*

The project involves repair of an existing fence and habitat restoration. The project will significantly improve the natural resources by preventing further degradation of the site. The

restoration activities include the control of invasive species and improvement of the indigenous structure, composition, and function of the wetlands ecosystem at Nu'u Pond.

Staff notes that the proposed project will not have substantial adverse impact to existing natural resources within the surrounding area, community, or region.

5. *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding area, appropriate to the physical condition and capabilities of the specific parcel or parcels.*

The project is located in a rural area of Maui with numerous cattle fences already in place. Additionally, the repaired fence will be located in the same location and serve the same purpose as the existing fence. The project will improve the functional capability of the fence by repairing damages to its integrity.

Staff notes the proposed project is compatible with the locality, and surrounding area, and is appropriate to the physical condition and capabilities of the subject parcel.

6. *The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable.*

The most direct beneficiary of the project will be the three endangered species (Hawaiian stilt, Hawaiian coot, and Hawaiian goose) which utilize Nu'u Pond for foraging, nesting, and breeding. By excluding ungulates, the ecological integrity and aesthetic qualities of the site will be preserved and improved upon.

7. *Subdivision of land will not be utilized to increase the intensity of land uses in the conservation district.*

The proposed project does not include subdivision and will not increase the intensity of land uses in the Conservation District.

8. *The proposed land use will not be materially detrimental to the public health, safety, and welfare.*

Staff notes that the proposed project will not be materially detrimental to the public's health, safety, and welfare.

DISCUSSION:

The project is an identified land use within the Conservation District, pursuant to HAR §13-5-22, P-7, SANCTUARIES (D-1) *Plant and wildlife sanctuaries, natural area reserves and wilderness and scenic areas, including habitat improvements under an approved management plan.* The CDUA requires Board approval. It is staff's opinion that this proposed action meets the definition of the above cited identified use.

RECOMMENDATION:

Staff recommends that the Board of Land and Natural Resources **APPROVE CDUA MA-3515 WITH ASSOCIATED MANAGEMENT PLAN** for the Maui Coastal Land Trust's Nu'u Pond habitat restoration and fencing project, subject to the following terms and conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules, and regulations of the Federal, State, and County governments, and applicable parts of Chapter 13-5, HAR;
2. The applicant, its successors, and assigns, shall indemnify and hold the State of Hawai'i harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;
3. The applicant shall provide documentation (i.e. book/page document number) that this approval has been placed in recordable form as a part of the deed instrument, prior to submission for approval of subsequent construction plans;
4. Any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within three (3) years of the approval of such use. The applicant shall notify the Department in writing when construction activity is initiated and when it is completed;
5. Use of the area shall conform with the approved management plan;
6. The applicant will donate a conservation easement to the County of Maui that will: 1) guarantee public access while taking into account the need to protect endangered species, preserve the integrity of the numerous archaeological sites and ensure public safety; and 2) prevent any type of future development on the entire 78 acres of the Nu'u Refuge;
7. Removal and disposal of replaced fence materials shall be transported to an authorized off-site landfill(s);
8. Should historic remains such as artifacts, burials, or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact SHPD (808-692-8015), who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;
9. The applicant understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;

10. In issuing the permit, the Department and Board have relied on the information and data which the applicant has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the Department may, in addition, institute appropriate legal proceedings;
11. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard within a time frame and manner prescribed by the Chairperson;
12. Other terms and conditions as prescribed by the Board; and
13. Failure to comply with any of these conditions shall render this Conservation District Use Permit null and void.


Respectfully Submitted,



Audrey Barker, Staff Planner
Office of Conservation and Coastal Lands

Approved for Submittal:

By:



LAURA H. THIELEN, Chairperson
Board of Land and Natural Resources



Map of Maui showing the location of the Nu'u Wetlands, TMK (2) 1-8-1:01 (Portion). The Maui Coastal Land Trust is in the process of purchasing this property from Kaupo Ranch, LLC. This project will repair the damaged fence constructed by the Division of Forestry and Wildlife (DLNR) in 1999.

EXHIBIT

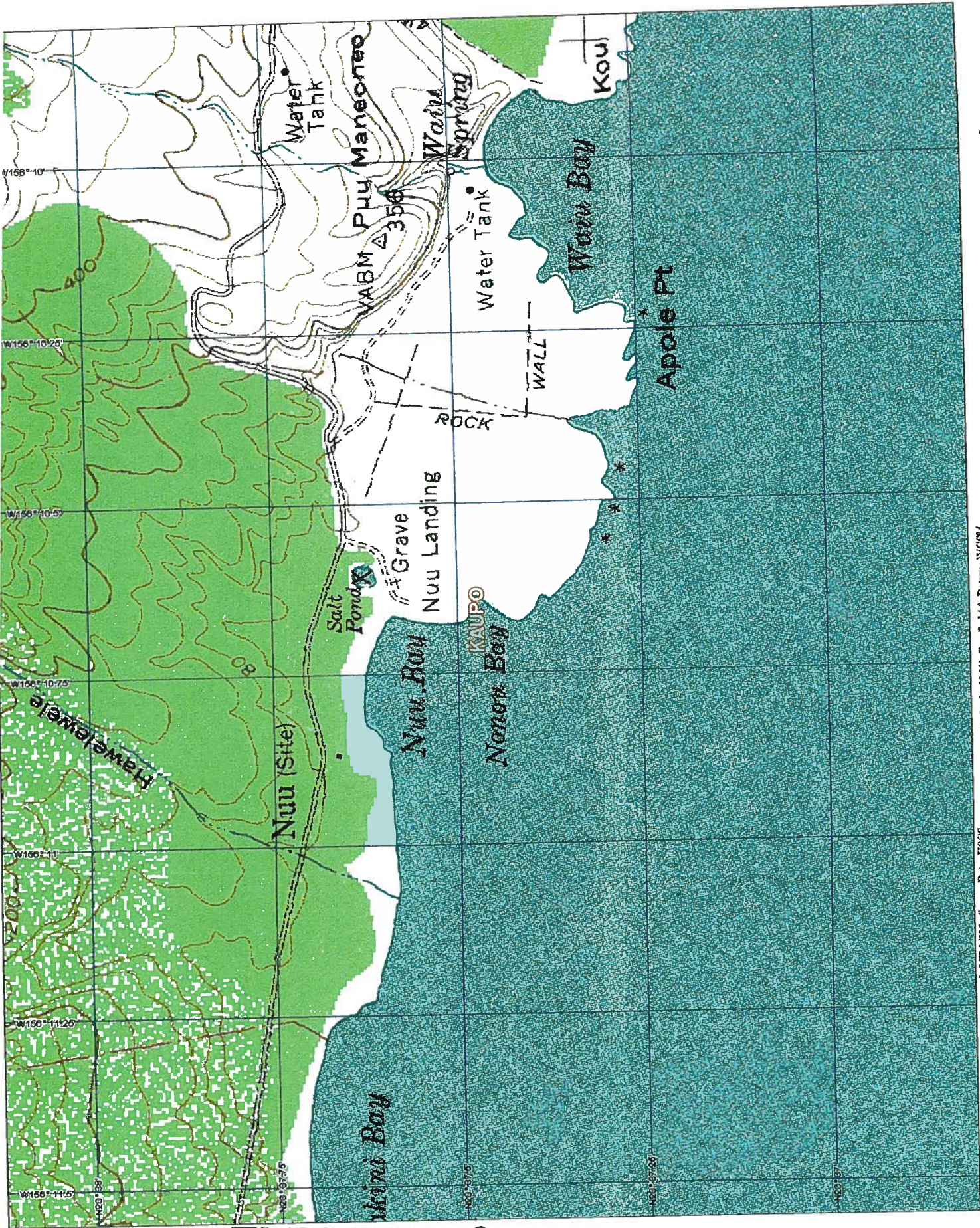
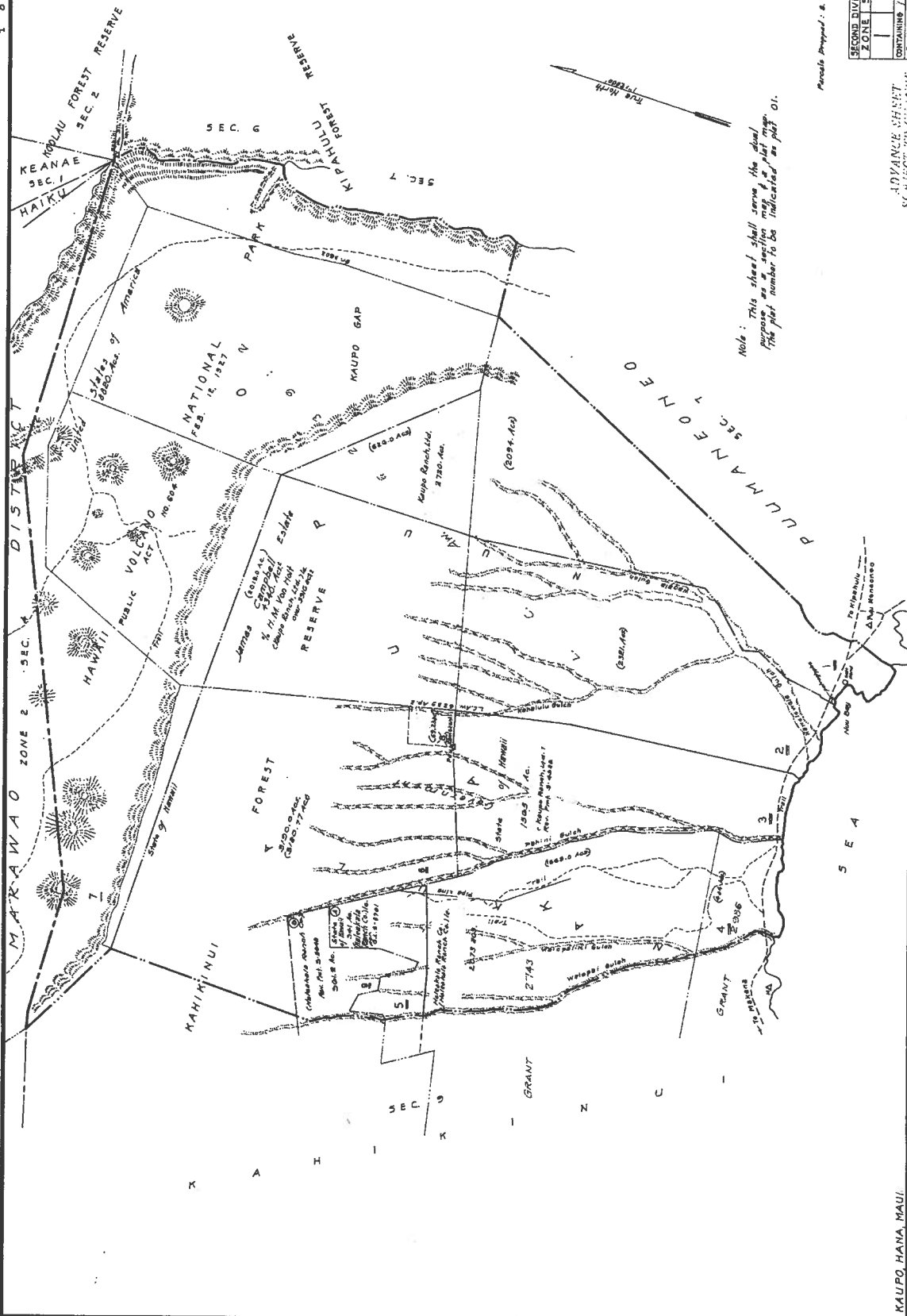


EXHIBIT 2

Resource maps = X = Wetland Site With numerous endangered species and



Note: This sheet shall serve the dual purpose as a section map & a plot map. The plot number to be indicated as plot 01.

Parcels dropped: 8.

SECOND DIVISION
ZONE SEC.
1 8
CONTAINING / PLATE
Scale 1 in. = 2000 ft.

FORNARD, J. DEPT'S
LITHO. FORDMAN

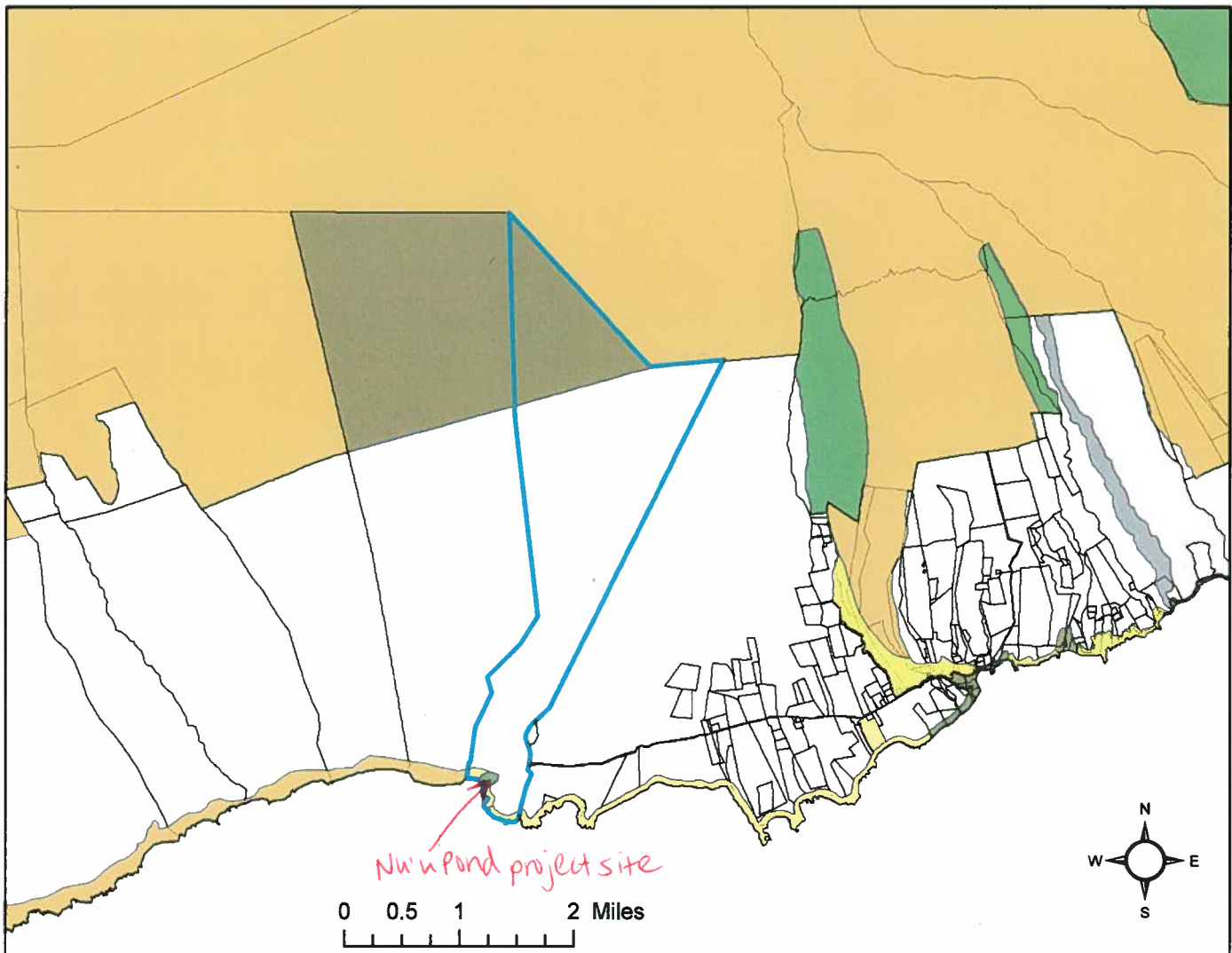
PRINTED...

KAUPO, HANA, MAUI

EXHIBIT 3

DMG. No.	2045	Appr. by:	
By:	XK-5, 1-8-88	Reviewed by:	L.H. May, 1934
Source:	Survey Boat	Appr. by:	

Subzone map for TMK: (2) 1-8-001:001



Legend

Subzones

- Undesignated
- General
- Limited
- Protective
- Resource
- Special

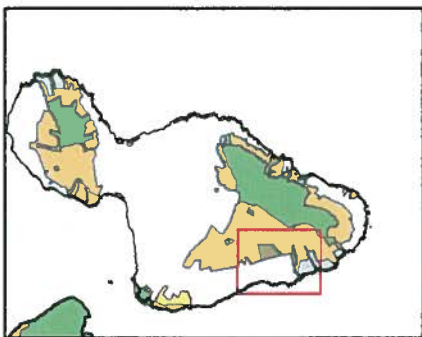
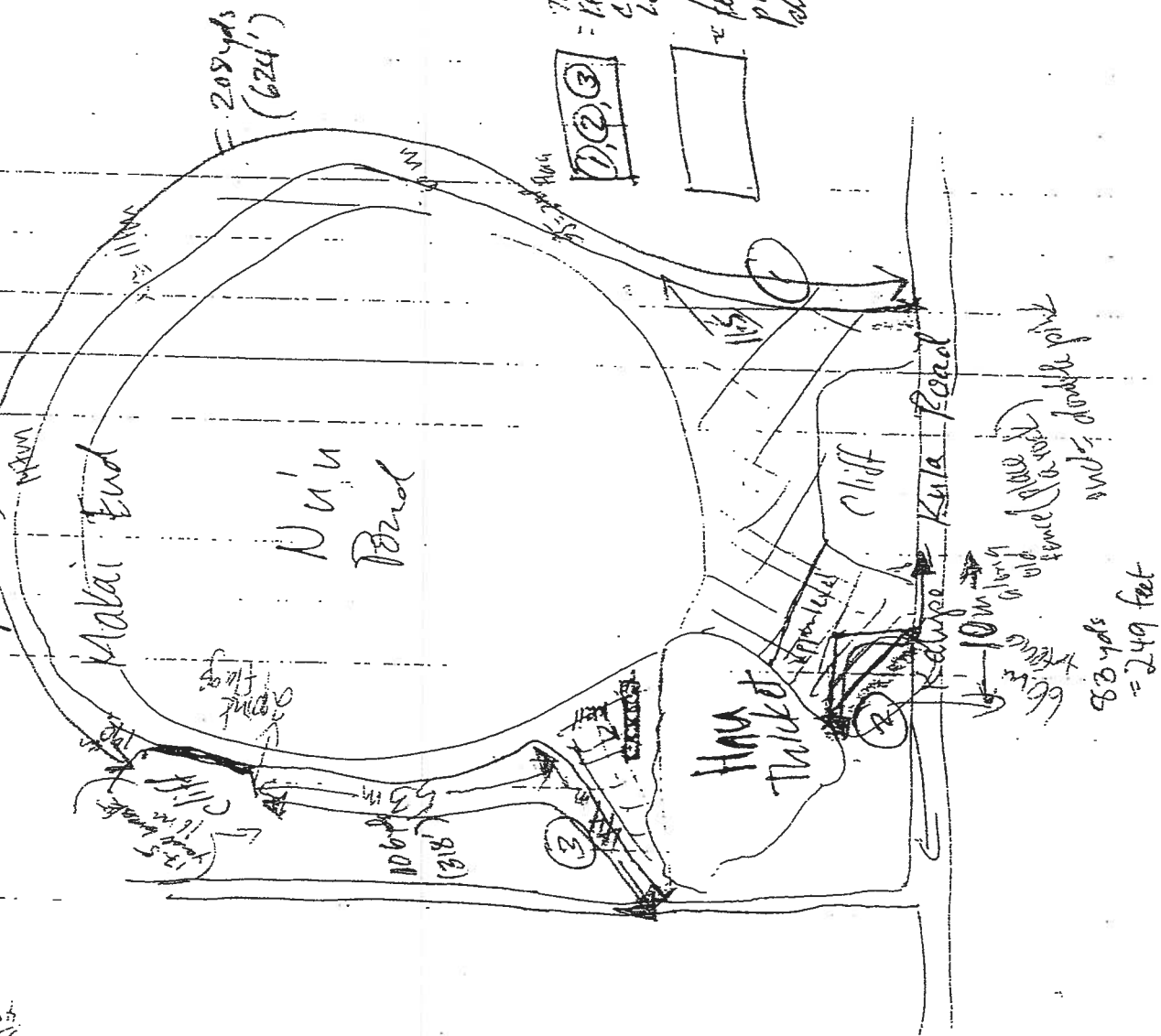


EXHIBIT 4

市場

EXHIBIT 5



Site Plan drafted by D&F A in 1999

Regulatory Actions to protect
significant Historical Site

3 Changes have taken place at No.

① ~~rest~~ ^{with} end of pond up slope and connect to old fence line at Kariya Kula road.

② Fence from old fence at Camp
Kula road down at angle
to "upper end" of eastern
side of Haul Flicket.

(3) Fewer exposure at angle below old wall & than pocket on eastern end of pond to edge of the pocket at the edge the N. in landing &

There-
fore required
access to proper
localities

re-fencing in
purchased at 70'
above high water line

in	7
140	$\Rightarrow 208$
53	$\Rightarrow 58$
44	$\Rightarrow 48$
76	$\Rightarrow 83$

396.8 yds. - 1190.3

25/11/19 fest



Nu'u Pond Fencing Project Site Plan: Fence Repair will include the 1,191 linear feet outlined in yellow. Section 1, along the Ulupalakua-Kaupo Road measures 311 feet. Section 2 measures 427 linear feet and Section 3 measures 453 linear feet. The fence will be 56 inches tall and will be replaced with a 1047-6 Bezinal fence and topped with a single strand of 12.5 gage barbed wire. Removal of invasive Kiawe (*Prosopis pallida*) and Christmasberry (*Schinus terebinthifolius*) will take place along the corridor on either side of the fence line. Upon completion of this project, the interior of the pond will be planted with 'Ae 'Ae (*Bacopa monnieri*), Akulikuli (*Sesuvium portulacastrum*), Makaloa (*Cyperus laevegeticus*) and Kaluha (*Bolboschoenus maritima*) from stock already growing on the site. Although our restoration efforts will initially involve improving the

EXHIBIT 6

habitat of the wetlands, over time we will replace invasive plant species with appropriate upland plants. These upland plants will primarily include Loulu (*Pritchardia* spp.), Naio (*Myoporum sandwicense*) and 'Aweoweo (*Chenopodium* spp.).

CDUA MA-3515: Site Photographs – Nu‘u Pond Fence



Existing fence

EXHIBIT 7

CDUA MA-3515: Site Photographs – Nu‘u Pond Fence



Trees causing damage to fence

CDUA MA-3515: Site Photographs – Nu‘u Pond Fence



Pig damage



Map indicating the approximate location of trees to be removed during the course of the fencing repair project. These are trees which are likely to directly impact the function and integrity of the repaired fence. Legend: X represents one tree in area around the Nu'u fence project. Species include *Prosopis pallida* and *Schinus terebinthifolia*, with *P. pallida* dominating the site.

Landscape Plan for Nu'u Wetland

EXHIBIT 8



Map indicating MCLT's proposed indigenous planting areas. Legend: 'O' indicates the approximate area where upland plants will be replanted upon completion of the fencing repair project and the removal of invasive species. Species slated for planting include Loulu (*Pritchardia* spp.), Naio (*Myoporum sandwicense*) and 'Aweoweo (*Chenopodium* spp.). The area outlined in reds indicates the wetlands, or Nu'u Pond. Our replanting efforts in this area will include supplementing existing populations of 'Ae 'Ae (*Bacopa monnieri*), Akulikuli (*Sesuvium portulacastrum*), Makaloa (*Cyperus laevegeticus*) and Kaluha (*Bolboschoenus maritima*) from stock already growing on the site.

Nu'u Refuge Management Plan

Background

Since late 2005 the Maui Coastal Land Trust has worked to purchase the 78-acre parcel locally known as the Nu'u landing, a reference to the docking facility used to transport cattle to offshore ships in operation into the 1950's (TMK 1-8-1:01 (Portion)). Three things made this particular parcel attractive to the land trust. First, the incredibly biologically rich Nu'u Pond (approximately six acres in area) made it an excellent candidate for ecological restoration work. Second, the presence of numerous archaeological features, ranging from modest C- and L- shaped structures, to heiau (temple) sites, to elaborate petroglyph and pictographs, contribute to the cultural and historical context of the property. Finally, Nu'u landing is a popular recreation site, particularly for diving and fishing, but also for camping and hiking.

Through the commitment of the Maui Coastal Land Trust as well as the US Fish and Wildlife Service, the Department of Land and Natural Resource's (DLNR) Division of Forestry and Wildlife (DOFAW) and the County of Maui, the purchase of this property will occur by the summer of 2009. Like the 277-acre Waihe'e Coastal Dunes and Wetlands Refuge, the primary management goals will be to restore sensitive areas within the Nu'u Refuge, to encourage appropriate and respectful public use, including education, and to protect the numerous archaeological features on the refuge. In 1999 DOFAW constructed an ungulate proof barrier fence around the ecologically sensitive Nu'u Pond which has contributed to the remarkable recovery of this wetlands site. This fence now requires maintenance repairs in order to restore its functional capacity as a barrier for a variety of ungulates, particularly pigs.

Threats to Nu'u's Ecological Integrity

The Memorandum of Understanding (MOU) between Kaupo Ranch and the Department of Land and Natural Resources which permitted the construction of the barrier fence has also provided for limited restoration work in the intervening decade. However, since March of 2007 a quarterly ecosystem monitoring program has been conducted on the Nu'u Pond. This study has revealed that the Nu'u Pond remains among the healthiest coastal palustrine discharge wetland in the entire state. In large part this is

due to the presence of the ungulate proof fence constructed by the Division of Forestry and Wildlife. However, like most low elevation ecosystems in Hawai'i, Nu'u faces numerous ongoing challenges to the structural and functional integrity of its indigenous and endemic flora and fauna. In general these threats can be divided between the threats posed by invasive plants and animals and the direct threats posed by human visitors, both intentional and unintentional. While addressing some of the human related issues will come through a commitment to education and enforcement, addressing the floral and faunal issues will require direct work in the field.

Management

The goal of ecological restoration work in the most sensitive locations on the refuge, particularly in the Nu'u Pond, will be to improve the quality of habitat, primarily to benefit the endangered waterbirds which utilize the pond. These include the Hawaiian Stilt (Ae'o), Hawaiian Coot ('Alae Ke'oke'o), the Hawaiian Duck (Koloa) and the Hawaiian Goose (Nene). All of these species have been recorded in the Nu'u Pond, and ecological restoration efforts have the potential to significantly improve the habitat potential of this site. Ecological restoration work will consist of both direct work in the field and monitoring of ecosystem indicators to determine the effectiveness of various restoration strategies. The following is a list of ecological restoration techniques proposed for use in the Nu'u Pond:

- Repair of the existing ungulate (primarily pig) proof fence constructed by the DLNR in 1999.
- Removal of invasive plant species, primarily Kiawe (*Prosopis pallida*, a phreatophyte) and Christmas Berry (*Schinus terebinthifolius*).
- Predator control, primarily of cats, mongoose, rats and cattle egret (pending the issuance of a control permit).
- Removal of ungulates (pigs, deer and goats)
- Planting of appropriate indigenous plants, such as Loulu (*Pritchardia* spp.), Naio (*Myosporum sandwicensis*), and Hala (*Pandanus tectorius*) in the area surrounding the wetlands and Kaluha (*Bolboschoenus maritimus*), and Makaloa (*Cyperus laevageticus*), in the wetlands.

- Creation of appropriate structures and features to facilitate successful waterbird breeding (e.g. nesting islands).

Of all of these activities, the repair of the fence surrounding the wetlands is by far the most important and the most urgent. Monitoring photos taken prior to the construction of this fence indicates extensive damage to the wetlands, primarily by feral pigs. Since the construction of the fence indigenous vegetation has rebounded dramatically, with the majority of the pond now covered with extensive areas of Kaluha and Makaloa. Monitoring of the pond area since 2006 has indicated that feral pigs now regularly access the pond, with deep wallows visible in numerous areas. Additionally, the fence serves as the primary barrier for dogs brought in by recreational users of the Nu'u landing area. While we will address this issue through community outreach and education, the experience at the Waihe'e Refuge suggests that it may take several years before people understand the importance of keeping their pets under control.

Through a generous grant by the US Fish and Wildlife Service funding has been secured to repair the fence and conduct restoration work. As part of the Maui Coastal Land Trust's land stewardship strategy, upon the completion of this project, regular fence maintenance inspections will take place at intervals no greater than every two weeks. These fence inspection visits will look for any indication of disturbance to the structural integrity of the fence, while also looking for any indication of the presence of pig, deer or dog within the confines of the Nu'u Pond.

Conclusion

The Maui Coastal Land Trust is committed to preserving the cultural and ecological integrity of the Nu'u Pond. Through a combination of public outreach and ecological restoration work we will improve the structure, function and composition of this site in favor of indigenous and endemic floral and faunal species. While our short term goals include repairing the functional integrity of the ungulate proof fence and controlling predators in the pond area, our long term goals include removing the invasive plants and restoring the indigenous vegetation. The Nu'u Pond's potential for habitat improvement is revealed by monitoring studies and photographs which reveal incredible changes in the sites structure, function and indigenous plant and animal composition.

The first step in the restoration of this site lies in repairing the structural integrity of the Nu'u Pond ungulate proof fence.

Drafted by Scott Fisher

Project Manager

Maui Coastal Land Trust

May 19, 2009